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ABSTRACT

This paper discusses two current problems of concern to educational planners in the U.S.S.R. and describes the approaches being taken to address them. One major objective of Soviet educational planners is to greatly expand the percentage of students receiving a complete secondary education. This will require considerable expansion and restructuring of the secondary school system, with special attention to the role of technicums, or specialized secondary schools. A second major planning problem is the need to consolidate the large number of small rural schools into larger schools that are both more effective educationally and more efficient economically. Following the discussion of these planning objectives is a question-and-answer section, in which the author responds to specific questions about his discussion and about the process of educational planning in the U.S.S.R. In addition, a brief outline and diagram of the structure of the Soviet educational system are also included. (JG)

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The Fundamentals of Educational Planning : Lecture - Discussion Series

No. 5 PROBLEMS FACING EDUCATIONAL PLANNERS IN THE SOVIET UNION TODAY

by Professor V.A. Jamin

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by

Professor V.A. Jamin

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PROBLEMS FACING EDUCATIONAL PLANNERS IN THE SOVIET UNION TODAY(1)

My report concerns the present-day problems of the planning of public education in the Soviet Union. It is a very broad subject, and I think it best to concentrate on only one of its aspects, namely planning in relation to the secondary schools. I shall therefore not attempt to deal with the planning of the entire complex of public education. At the present time the problem of the transition to universal and complete secondary education is extremely important. A system of eight years' compulsory education is in effect in the Soviet Union. However, it has now been decided that in the very near future we must make provisions for universal and complete secondary education; by this we mean education of ten or eleven years duration.

The achieving of this target is set for the period beginning in 1970. But before we resolve the problem of the transition to universal and complete secondary education, it is unquestionably necessary for us to think through an entire series of important problems, and this is precisely what we are doing now. Recently (in January 1966) there was a theoretical conference at our Institute on "The Economic Problems of the Transition to Universal Secondary Education". This conference attracted the attention of economists working on the problems of public education in the Soviet Union. Participants in this conference were not only Moscow economists, but also many from the Ukraine, White Russia and from other areas. We examined an extensive set of questions, and our proposal was sent to the State Planning Commission and to the Government. This conference demonstrated the importance of economic problems in addition to pedagogical and psychological ones. I must add that in this respect we were aided by the work of the September plenum of the Central Committee of the Communist Party of the Soviet Union. This plenum requested the strengthening of the economic basis of all aspects of the life of our society. Consequently, matters of public education must receive a larger economic basis.

During the above-mentioned conference we very strongly emphasized the necessity of a thorough analysis of the results of the execution of the law on universal and compulsory elementary (eight year) education before reaching definite conclusions and decisions on the matter of universal and complete secondary education.

The introduction of compulsory elementary education was an extremely complicated affair, and it continues to trouble us to the present time. In elementary education, there are still several matters which demand improvement and further work. And naturally, in order to guarantee the implementation of universal and complete secondary education, we must consider the mistakes and shortcomings, as well as the successes, of the compulsory elementary education programme.

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(1) Edited English translation made from the recording of the lecture given in Russian at IIEP on 26 January 1966.

This analysis is very important for us because the scale of pedagogical work in the Soviet Union is enormous. I should like to draw three figures to your attention. These figures will give you some idea of the complexity of the effort.

In 1964/65 over 68,000,000 persons were enrolled in the various educational establishments of the Soviet Union. Slightly more than 42,000,000 were enrolled in primary and secondary schools. There are 218,000 general education schools with more than 2,000,000 teachers working in them. Naturally, such a system demands considerable expenditure on the part of the State, and this expenditure on education is continually increasing. In 1964, 18.8 billion roubles were spent on education; of this total, 15.1 billion roubles were provided by the State, and the remainder includes the expenditure of collective farms, co-operatives and other organizations.

The first matter which always troubles both the theoretical and the practical planners is the problem of planning the enrolment of pupils. At the present time the planning of enrolment is in the first place closely connected with the number of young people who must receive instruction; consequently, there is a demographic factor which influences the decision. Secondly, planning of the enrolment is also closely related to the type of schools which the young people will enter: whether they will be in general secondary schools or in other types of secondary establishments (I will discuss the types of these schools below). Thirdly this planning also includes the definition of the form of instruction which the pupil will receive, that is whether he will be in a day school, an evening school, or whether he will be a pupil by correspondence.

Before proceeding to several related problems, I want to say something about the basic types of schools in the Soviet Union.(1) The first type is the general education school with instruction during the day. The largest majority of young people study in these schools. The second type is for rural and urban young people who work; as a rule, this is an evening school, but sometimes it is organized in such a way that the pupils attend school between shifts, so that someone who works at night can attend school during the day.

Another type of secondary establishment is the specialized secondary school. We call this school a technicum, but this name does not mean that such schools only train technicians. Among others they also train medical workers, primary school teachers, etc.

There is finally the vocational technical school which provides the training of skilled workers. Pupils in this type of school are trained in a specific skill and at the same time they receive a certain general education. These then are the basic types of school which constitute the secondary education system in the Soviet Union.

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(1) See page 16 : The Structure of Education in the USSR.

One of the problems which will arise in connection with the introduction of complete secondary education is the structure of secondary education, that is, how secondary education will be developed in terms of the types of school which I have just enumerated.

According to calculations it is absolutely clear that the number of pupils enrolled in the ninth and tenth grades of the general education secondary school will increase. If at present 50-60 per cent of the pupils who graduate from the eighth class enter the ninth class (this is the average figure, but note that it varies for different cities, districts and republics), we plan that by 1970 at least 75 per cent of those who graduate from the eighth class will go on into the ninth class. Consequently, given this increased quota, there arises the problem of increasing the number of classes in the secondary schools - the ninth and tenth classes.

Furthermore, in connection with the structural change, it is obviously necessary to increase the number of technicums, i.e. of specialized secondary schools. This is due, first of all to the general increase of the population; and, secondly, to the necessity of increasing the proportion of specialists with secondary education. These specialists are indispensable for the national economy, particularly in industry. In this respect there is a well known deficiency which we have recognized and are trying to correct. We produce enough engineers, but not enough technicians, i.e. those possessing a specialized secondary education. At the present time the ratio of engineers to technicians is 1:2, but in some enterprises the ratio is 1:1. This is, of course, an abnormal phenomenon. According to our approximate calculations, the ratio, which will vary according to the type of work, must be changed to at least 1:4 or 1:5; and we must make provisions for such a change by extending specialized secondary schools.

Briefly, I will explain what task we are placing before the vocational technical schools and what results we expect to receive from them in the very near future. These schools, as mentioned, train skilled workers such as metal craftsmen, lathe operators, construction workers, etc.

On the whole, from the point of view of the training of workers, this form of school has justified itself, and we hope to develop it further. But until the present time, because of varying vocational requirements, the period of instruction in these schools ranged from six months to three years. A young boy or girl who enters such a school for a period of only six months cannot be given a full secondary education in any form. It is therefore necessary to prolong the period of instruction in such schools in order to provide not only training in view of a specific skill, but also extensive general education.

At this point, another problem appears. Economists, who in my opinion look at the question from an elementary economic standpoint, argue that such a solution would be expensive. They say, for example, that it will not be economically efficient if we shall take a two-year period to train a housepainter, instead of the previous six months'

period. In other words, is it economically sound to give the worker almost a full secondary education in addition to his vocational training? From my own point of view, I am in favour of such a solution. It will be efficient, it will pay for itself, in the long run. Education is the kind of thing which does not manifest itself immediately, and this is particularly true of general education. The results are revealed through a series of connecting links: first, there is a good attitude towards work, secondly a more rational approach to the job, and finally other advantages, such as a better attitude towards social property. Consequently, general education has a high economic effect, even if its calculation is a difficult matter.

It should be noted that in practice as well as in theory there has been a marked tendency towards lengthening the period of secondary technical education. On the average, the period of instruction in vocational technical schools has increased two to three times over what it was ten years ago. If a period of instruction of six to eight months was predominant earlier, now the usual period is from one-and-a-half to two years. In the case of complex vocations, such as that of an adjuster-repairman, there is already a three-year period of instruction.

The second and equally complex problem, besides the structure of secondary education, is that of the size of the schools. This is a very pressing question for our country, although I think that the same problem also exists elsewhere. It is due in particular to the enormous dispersion of population on our territory, for we must have at least a primary school in each population centre. This is the reason why we have many so-called single-staffed or understaffed schools. By single-staffed, we mean a primary school in which one teacher must instruct pupils from the first through the fourth classes. An understaffed school is one where one teacher must instruct two or three classes.

Here are some figures which illustrate the problem. According to the 1959 census of the Russian Republic (not the entire Soviet Union, but only the Russian Republic) there were 294,059 population centres; over 40 per cent of these centres had a population of less than 50. Those with a population of less than 200 compose 77.6 per cent of all population centres. Imagine such a colossal figure, almost 80 per cent of all the population centres in the Russian Republic have a population of not more than 200 people. Furthermore, there exist some centres - 13 per cent of the total - where the population is 10 or less. This obviously makes the problem of the introduction not only of compulsory elementary education but also of universal and complete secondary education very complex. The population centres are located at great distances from each other, and the maintenance of separate small schools is very expensive. For example, 58 per cent of the primary schools from the first to the fourth classes in the rural population centres of the Russian Republic have less than 30 pupils. Rural eight-year schools with a number of pupils under 200 constitute about 60 per cent of the eight-year schools in the Russian Republic. In the cities, only 5.3 per cent of the eight-year schools have less than 200 pupils. I could cite more figures but these demonstrate how complicated our task is.

The problem comes to this: we must consolidate the schools, the primary schools, and the eight-year schools and even more so the ninth, tenth and eleventh classes.

Practically speaking, the process of consolidation is moving forward, although slowly, because consolidating the schools means that either a boarding-school must be attached to the school proper, or the transportation problem arises and must be dealt with. In other words, a series of economic matters must be resolved before deciding whether it is appropriate to adopt and carry out one or another form of consolidation in a given place, district, village or group of villages.

But besides these purely economic matters, very complex pedagogical and sociological problems arise (e.g. parents do not want to surrender their children to a boarding-school).

According to the calculations of our laboratory, the consolidation of schools must nevertheless be accelerated. We formulated this proposal in the press, our idea was forwarded to certain government organs and it has now found support. Here are some figures. The maintenance of a primary class in a rural school costs 1,600 roubles annually, and if we replace schools of three classes or less by consolidated schools, we can economize something like 150-160 million roubles. The point is that expenses per pupil in a primary school with two or three classes are much higher than in a consolidated school. If a teacher instructs five pupils when he could be instructing thirty, this means that expenses per pupil in a small school are about five times greater than in a consolidated school. This calculation does not include other expenses such as separate school buildings, etc.

We have calculated that we can build 640 consolidated schools with the savings realized from liquidating the small primary schools. At the same time, we think that building of consolidated schools must be parallel to consolidating the population centres. This is particularly evident in the Baltic Republics and in the Ukraine, where population is concentrating. However, in our opinion, the rate of establishing consolidated rural schools must be faster than the one of population consolidation, and these schools must be built in places which in the future we expect to become important population centres.

The third problem is closely related to the preceding one and appears as its logical consequence: the geographical distribution of the schools. We have always devoted a great deal of attention to it. At the present time, it is obligatory that new schools be established in new cities and in new population centres. There are strict regulations foreseeing that new schools be built at the same time, and sometimes even before, the construction of housing and other communal institutions and equipment. We can openly say that not very long ago this was not the case; the economic executives considered as the most important step and cared mainly about building the enterprise, the factory, and thought that playgrounds and schools could be built afterwards. Thus a contradiction developed. A plant was built, but there

were no workers because the workers need first of all housing, then schools and playgrounds for their children, and then other communal facilities. From now on, therefore, when we plan the development of population centres, it is compulsory that the prospect of schools and of other general education institutions be considered right at the beginning.

We must approach the problem of the construction of new schools rationally, with a definite scientific approach. According to the estimations of Ukrainian economists, the perspectives for the rural areas of the Ukraine are that, instead of dispersed and small population centres there will be centres of 2,000 to 4,000 people. Such centres will require eight-year schools with space for 320 to 640 pupils which is a more or less optimal size for such a school. According to the same estimations, the optimal solution for an urban population centre of the future appears to be the construction of three eight-year schools with places for 960 to 1,280 pupils. These schools should be provided with a complete range of facilities indispensable in a modern type of school: kitchen, games rooms for pupils in the first class, dining areas, rooms for the afternoon naps of the youngest pupils.

With regard to the problem of the geographical distribution of schools, it is extremely important to come to a correct decision on how to direct capital investments to different areas. We must decide which school construction should have first priority and which should be assigned second priority. Until quite recently local authorities based their decisions about investments in school construction on local budgetary considerations, and to a certain degree their decisions were 'empirical'. Sometimes they were influenced by subjective factors. For example, there is a certain population centre. The chairman of the district executive committee is a very energetic and active man. He presents his claims with supporting evidence to the provincial authorities who disburse funds. He states that his area must have schools, and he obtains what he asks for. But it may very well be that even though there is no school in a given area, a school should not be built there; instead, another location must be given first priority.

For these reasons, we have developed an entire system of criteria which must be considered in the determination of first priorities for capital investment. The schools of a given district are investigated, for we must have a complete picture of all the conditions: the number of classes, the space in square metres, the types of school buildings, etc. Recently, we have started to apply computer techniques in this respect. All the data are programmed, processed, and the answer shows which areas and which population centres should receive first priority for new school constructions. As a rule, oppositions to the machine's decision are not successful, but sometimes calculations have to be revised in view of certain economic considerations. There is no need to have blind faith in the machine. Nevertheless, this method provides us with a very important tool for the planning of capital investment in the construction of new schools.

We are also concerned with special schools and boarding-schools for children with physical defects - for blind children, deaf children, etc. The network of these special schools was formed spontaneously. In some cities, there are several of them, due to historical conditions which determined their development. But in several others, such schools do not exist, or when they do, they are very small. Small schools for handicapped children are very expensive, and since the pupils in these schools are fully supported by the State, the problem of economic calculation is very important.

Recently, we put forward a series of proposals on the most advisable geographical distribution of schools for handicapped children. The crux of these proposals is that these schools should be established in every province. According to our calculations, the most advantageous and economical school would be one where from 220 to 250 children are receiving instruction.

One more question which disturbs us very much and is the object of some of our work is the problem of repeaters, of pupils who are kept back in the same class for a second year. Sociological, pedagogical, and to a certain degree economic problems intersect at this point. We know from experience and from statistical evidence that pupils who do not complete the eight-year course are for the most part those who had to repeat one class.

It is necessary to analyse the causes of the need for pupils to repeat the same class, and we are trying to do this. Until very recently, the leading figures in public education always emphasized that pedagogical reasons were the main factor, that insufficient work on the part of the teacher was responsible; i.e., his inability to approach the pupil. We think that this analysis is correct, but it would be wrong to stop there. We must analyse the problem more profoundly, and ask why the teacher does not give the pupil enough attention. At this point we find that there are reasons other than pedagogical in the narrow sense. One of them is that the teacher himself was inadequately trained, which of course raises the whole problem of teacher training, but the analysis must go still further. Sometimes, one teacher may have to instruct four classes, and it seems impossible to train him adequately for such a job. Sometimes, the size of classes in urban schools is 40 or 42 instead of the norm 36, and this means that the teacher is under too much pressure and cannot find a good approach to the pupil.

Also the economic aspect is very important. Unfortunately, we still have some schools where pupils study in two shifts, sometimes even three shifts. Such conditions are very unsatisfactory, they represent an obstacle to good teaching methods and to adequate student-teacher relations. If a pupil belongs to the second shift, his teacher is not fresh and alert, and if he comes with the third (evening) shift, he suffers even more. We cannot expect high levels of performance when pupils and teachers find themselves in such conditions.

Our recommendation - and leading scholars and educators agree with us - is that it is necessary to eliminate two-shift and three-shift schools. This is a very urgent matter, of highest priority. But the economists of the State Planning Commission and those who control the budget, all have the same attitude. They listen to the recommendation on eliminating two-shift and three-shift schools, examine it very closely, and then they argue that, taking the Soviet Union as a whole, the size of the average class is low. But this - you will recall the figures I quoted - is very much due to a large number of rural schools with 10 pupils or less, or schools where the costs per pupil are very high - three, four and even five times higher than in larger classes. The educationists therefore answer that it is necessary to accelerate the process of the consolidation of schools, and that this must be done without delay. We also argue that such a policy would save money and that it will permit us to improve teacher training to provide a higher level of teacher performance.

At the present time, due to very low enrolments in some of the schools, we have to train teachers for the higher classes in two fields. Usually, these fields are related and we have combinations such as physics and mathematics, biology and chemistry, geography and geology. If they were not trained in two fields, the teachers simply could not work the necessary number of hours. This naturally lowers the quality of their training, particularly in the dual field combination of physics and mathematics where each field is difficult. But in a consolidated school, each teacher could have enough classes so that he could teach only his major field, for which he has been trained properly. The consolidated school would be ideal, because the pedagogical institutes could then drop the dual field system and begin a single field training programme. But this will be possible only when appropriate conditions are established in the schools.

In this connection we come to the problem of improving the technical equipment of the schools. In a large modern school, it is possible to have better equipment and laboratories for physics, chemistry, mathematics, etc. In small schools we cannot have them; if we did, we could give the pupils a better education which would help to solve the problem of repeaters.

Of the 30,000 five to eight-year schools in the Russian Republic, only half have a physics laboratory. This shortcoming and other similar deficiencies must be corrected. It is an important matter, and there is a large field of activity for our Academy of Pedagogical Sciences, in particular for our newly created Institute of School Equipment and Facilities. This Institute could develop models of school equipment for different districts and we could recommend these models to the builders and to the local authorities who supervise and finance the schools. By the same token, we could provide the schools with better teaching conditions.

These are only some of our most important problems - painful problems. We must solve them, and we are doing it in connection with the transition to universal and complete secondary education.

DISCUSSION

Question: Professor Jamin, we are most grateful for this very clear and candid discussion of some of the problems that are facing Soviet educational planners today. I suspect that many of the people around the table from different countries find some comfort in the fact that everyone is struggling with the same kind of problems.

I would like to ask the first question.

Right now, the IIEP is conducting research on the feasibility of applying new educational media to education and I wonder, in this particular period, when the Soviet Union is taking the great and rather rapid step forward to compulsory secondary education, whether this might not be an appropriate time to introduce some of the new media to help you solve the problems of generalizing your secondary education. Have you given any consideration to the economic as well as the pedagogical implications of introducing new media at this point?

Professor Jamin: You have very aptly noted that new possibilities come to light in connection with such an extensive transition to complete secondary education. Right now, we are working on precisely these problems on different levels, both from the technical standpoint and from the standpoint of curricula. Curricula are particularly important because they can be handled very successfully by television. Television is the best substitute for the direct classroom experience, for one can see practical exercises and experiments.

During the last two years, Leningrad television has been transmitting experimental programmes for secondary schools, and Moscow television now transmits programmes for institutions of higher learning. There is a third series of programmes for external students at the university level, and this series is designed entirely for instruction by television.

Question: Let me ask you another question that intrigues me.

Educational planners are usually in the position of helping to carry out a policy decision already made, and converting it into programmes. But occasionally they have an opportunity to help prepare the policy decision itself by examining in advance the implications - in terms of resources and the pedagogical implications - of it. You mentioned a profoundly important policy decision that was made by the Councils of the Communist Party to adopt compulsory secondary education. To what extent, prior to the making of the policy decision, did the educational planners project the implications of this decision in terms of the cost and of the teachers that would be required?

Professor Jamin: Before we decided, investigations were made, both at the level of the State Planning Commission and at the level of the Republic Planning Commissions. Estimations were made of the necessary network of schools and of the number of teachers which will be required. Above all, we had to consider whether or not the State would provide the resources to support the project. These calculations were made at least 5 to 7 years ago. As always, the actual situation has modified our calculations. And now that the task has become very urgent, we are making new ones and we are examining the plan again in a more thorough manner as a result of experimental work and of practical experience.

Question: In taking account of the implications of the important policy decision to introduce universal secondary education you not only have to look at the financial implications but also at the manpower implications. For example, by holding students in school for two or three more years, you are deprived of their services during that period, but on the other hand, by turning out a much larger number of students who have had an extra two or three years of education and training you are supplying better qualified manpower. In the feasibility testing that you did prior to this policy decision, were these manpower considerations also taken into account?

Professor Jamin: That is one of the basic questions since in essence, if we answer it, we solve the problem. We must consider that over a particular period of time the national economy can absorb only a certain number of workers. From the theoretical and scientific point of view, we solve this problem by establishing a balance of the labour force of the country, a balance of labour resources. But here I would like to call your attention to some general considerations. In our country we have people who do not think that the introduction of complete secondary education is necessary. We discussed with them and tried to convince them that their approach is limited, that they are looking backwards instead of forwards.

The first and most decisive argument is that the contemporary scientific and technological revolution objectively demands personnel with higher skills. Practical experience and calculations demonstrate that to consider the worker of the future as somebody who simply presses a button and who therefore can be illiterate is absolutely wrong. It is possible that given an assembly line, or mass production system, or certain other systems of production, a kind of downgrading of the worker occurs, in certain jobs and at a particular time. By downgrading we mean that a lower level of training is required for the worker. However, this is only temporary and it does not occur in many sectors of production. In the long run, automatic production lines change the character of the worker. As a rule, he becomes an 'adjuster', somebody mainly occupied in adjusting the automatic machinery. This often involves complex operations. In this context, I can quote research undertaken in the Gorki automobile plant. It revealed a complete change in the nature of work. In the past, an average skilled worker devoted to direct physical labour about 50 per cent of his time; work of a combined physical and intellectual nature occupied about 20 per cent of his time; purely intellectual mental work took about 15 per cent, and the remaining 15 per cent of the time was lost. But when we analyse the structure of work of an

adjustment worker in automated plants, we obtain the following proportions: physical labour from 15 to 20 per cent (there will always be some element of physical labour), combined physical and mental work about 35 to 40 per cent; mental work up to 25 per cent; time lost 15 per cent. Thus the structure of labour of such a modern worker is completely different: intellectual work and work of a combined intellectual and physical nature predominate. This change in the structure of work means that the worker must be prepared for it; and the best way of preparing him for these changes is an extensive, broad, general education. And this is one of the reasons why universal secondary education is necessary. We must train a new type of worker and raise the level of their training so that they can meet the demands of the scientific and technological revolution.

This is the purely economic aspect of the problem; in addition, there are social aspects which we should not underestimate. A person must develop his social sense, he must become a better citizen, etc. These goals again are best assured by a broad, general education including humanities.

There was a time when we overestimated the value of natural sciences and when their supporters were successful in restricting the activities of the humanists in the general education schools. This process has now been reversed; the humanists have repulsed the attack and are trying to obtain a larger role for the humanities in schools, although, of course, natural sciences remain essential. New courses are being introduced and we are extending the sections of history and literature. In this process there is an unavoidable struggle between the humanists and the scientists, but at present the humanists are gradually winning new positions. If this trend is to continue, it will be necessary to allow more time for humanities in schools, and therefore it will be necessary to lengthen the period of instruction.

Question: You have mentioned several times the concept of the optimum size of a school. Can this optimum be defined on the purely economic basis of a cost curve or do other pedagogical factors come into consideration?

Professor Jamin: No, our calculation of the optimal size of the schools is not based on purely economic factors; it includes pedagogical ones too. The size of the class creates the conditions for the teacher's work and for the work of the school collective. When we say that there are 250 people in a school for handicapped children, this is the collective, and the members of the collective reciprocally act upon each other and resolve their pedagogical tasks. Subsequently, the dimensions of the schools influence the character of the teacher himself and possibilities in the application of his knowledge. If, for example, the teacher is a specialist in one field such as physics or chemistry, and not a specialist in two or three fields, a large school affords him more opportunities to teach well and effectively. Therefore we do take pedagogical factors into consideration.

Question: According to what you have said, a great deal of work must be done by departments responsible for the orientation of students, i.e. the redistribution of students in different classes and different types of schools. I would like to know if there is a special department or service for this purpose or if everything is organized by the Gosplan?

Professor Jamin: Yes, there is a service for orienting the pupils. The State Planning Commission would not busy itself with this problem; it would never work on such a level. First of all, the teachers handle the work of orientation. There is also the director of educational affairs, and in some large schools there are two or three of these directors. They work in the senior classes of the elementary schools (fifth through eighth classes) and in the secondary schools. They have very close relations with the pupils and especially with the teachers. They are also in close contact with the pupils' parents.

At this point, certain practical factors must be considered. The pupil may not have a clear idea of what he wants to do, he may have only vague inclinations which often derive from his environment. Or he may not want to leave his parents. If this is the case and if there is a technical school in his city or nearby, he may choose to enter that particular school even when it would not be the right choice, even when that school would not suit him.

In any case, there is an organized information service which lists technical schools so that the pupils know where the various establishments are located. Catalogues are published annually, and they give addresses, examination requirements, etc., of different schools and institutions of higher learning.

But I must frankly state that the present organization of orientation services does not satisfy us. Recently, many articles have been published in newspapers, particularly in those of the youth organizations such as the Young Communists, and these articles stress the necessity of establishing special centres for professional orientation of the young people. In this respect, the first step appears to be a special institute attached to the Central Committee of the Komsomol. It is called the Institute of Problems of Youth, and in addition to a wide area of problems, it assists young people as far as their professional orientation is concerned. In general, I would like to stress that the whole problem of professional orientation is very urgent, and that we must resolve it, particularly in connection with the educational developments in our country.

Question: I would like to re-open the question of repeaters. You have given us several reasons for repetitions. I believe that one of them is the structure of the system itself. In a rigid educational structure with compulsory curriculum patterns, a repeater is usually a pupil who has failed to get an over-all average at the end of the year. But in fact there are many children gifted in one subject and weak in another and repetition has important psychological as well as economic and financial effects. Some educationalists suggest that repeating should no longer be enforced - the pupils should be automatically promoted each year according to their aptitudes into homogeneous classes. For example, a student gifted for mathematics and weak in literature would the following year be promoted to a class where all students were gifted for maths and weak in literature.

I would like to have your opinion on this subject.

Professor Jamin: Sometimes we can put forward certain theoretical propositions, but practice is always the best criterion. You argue that a pupil may be strong in some subjects and mediocre in others, that he will suffer psychologically if he is left behind: i.e., he becomes a sort of victim of the educational system.

But experience shows that as a rule the repeaters are not very competent, that they are lazy. From the pedagogical viewpoint this means that our work is defective; we were not able to teach them to work systematically. This is the main reason why pupils have to repeat a class for a second year. But why didn't we teach them to work systematically and to be industrious? I have already discussed these reasons.

In the Russian Republic alone there were 900,000 repeaters in 1962; this figure includes repeaters on all levels and does not separate the number of repeaters in the senior classes (fifth through eighth classes). This is almost one million repeaters just in the Russian Republic. The first draft of the present Five-Year Plan calls for the construction of new schools with a capacity for 1,200,000 pupils. This means that the repeaters virtually consume all of the increase in school construction.

Should we promote the pupil into the next class regardless of his performance in this or that subject? To my knowledge, this system is being applied in Czechoslovakia. If for some reason a pupil is not successful in one subject, he is not forced to repeat the same class, but he is promoted, and the teachers try to help him in the course of the second year. We are discussing this method and I have suggested that our pedagogues would consider it and examine the Czechoslovakian experiment insofar as it is relevant to the Soviet Union.

You are proposing another variant on this scheme. You recommend that those who are behind in a certain subject be grouped selectively, and not simply promoted to the next class. We could try this, but I think that the feasibility of such a method depends upon local conditions. Moreover, I believe it would be a very expensive procedure. If the pupil is mentally retarded then it can be done. We have special schools for mentally retarded children, and perhaps it will be necessary to establish more and more of them.

Question: I would like to close with one question which goes back to the debate you had with those who resisted the decision for compulsory secondary education.

Doesn't the decision to introduce compulsory secondary education carry within it an inevitable later decision that will be forced upon you, to undertake a correspondingly great expansion of post-secondary education. Because the experience seems to indicate that when more students get through the secondary level more of them will then want to go on to the next stage?

Professor Jamin: I think that your question is very appropriate. Naturally, the extension of universal secondary education involves the extension of higher education. We are thinking on these lines. Is it possible that a great extension of higher education might be harmful for society? Sometimes I encounter this sort of a feeling but I do not think that it is justified. For a certain process is in motion, an objectively conditioned process of changes in the nature of work. These changes are in a sense reciprocal; physical labour is giving way more and more to intellectual labour, while at the same time intellectual labour is changing in that a certain measure of physical labour is being added to it. This process is going forward both on the level of the ordinary physical worker and on the level of the skilled specialist, technician and engineer.

In connection with automation, mechanization, and the development of technology, the element of scientific labour in the work of the engineer and technician is increasing. In the society of the future, every large-scale plant will possess scientific and research laboratories (these already exist in certain cases). The engineer will work in the laboratory but also in the plant itself. There will be a reciprocal penetration, a kind of migration of intellectuals from the laboratory to the plant, to the production process. On the other hand, the types of intellectual work which are now long and arduous, such as bothersome calculations, will be performed more and more by computers. This means mechanization of some aspects of intellectual work, whereas since the apparatus and the techniques of production are complicated, more and more often the engineer acts as a direct operator in the plant. In the United States of America and in the Soviet Union there are many enterprises, chemical complexes for example, where about 20 per cent of the workers have a secondary technical education. Another example are the blast furnace workers who smelt steel; there is a very high percentage of technicians in this category, people who possess a special technical education. The workers in the optical industry are more and more often engineer-technicians. Therefore, the 'worker' in the old sense of the word is vanishing. For these reasons I do not think that we have to be afraid of having more and more people with higher education; this development corresponds to the needs of society.

Conclusion: I think the note on which Professor Jamin has ended is a very appropriate one. Once a society starts moving forward under conditions of technological and scientific progress it becomes, like compound interest, a cumulative process. If we look at the more developed societies around the world, it would appear that they are rapidly entering a situation where education for an individual does not end when he gets a degree, it only begins. He has got to continue his education in one form or another as long as he is going to remain active. From the social point of view all these industrialized societies, and the Soviet Union is a good example of it, are moving into what might be called educational societies in which a high proportion of their resources will be devoted to the life-long education of individuals. They will be able to afford this education precisely because they have invested so much in the education to start with. The developing countries may take a little longer to get there but I think the principles show clearly enough that the path is one that is well worth our investment.

THE STRUCTURE OF EDUCATION IN THE USSR

General education in the USSR today is given over a period of eight years for the age group of 7 to 15 and is a basis for all types of further education. It includes:

The primary level (grades 1 to 4) covering the 7 to 11 years age group.

The incomplete secondary level (grades 5 to 8) covering the 12 to 15 years age group.

At the end of these eight years of schooling students must pass an exam consisting of written tests in languages and mathematics and several orals. They are then awarded a certificate.

A student wishing to pursue his studies, may choose between three alternatives:

(1) Completed secondary education (grades 9 and 10) given in so-called 'secondary polytechnical schools' where the basic knowledge acquired during general education is elaborated and extended. But 1/6th of the timetable is devoted to a vocational apprenticeship directly linked with production. These studies lead to a secondary school-leaving diploma.

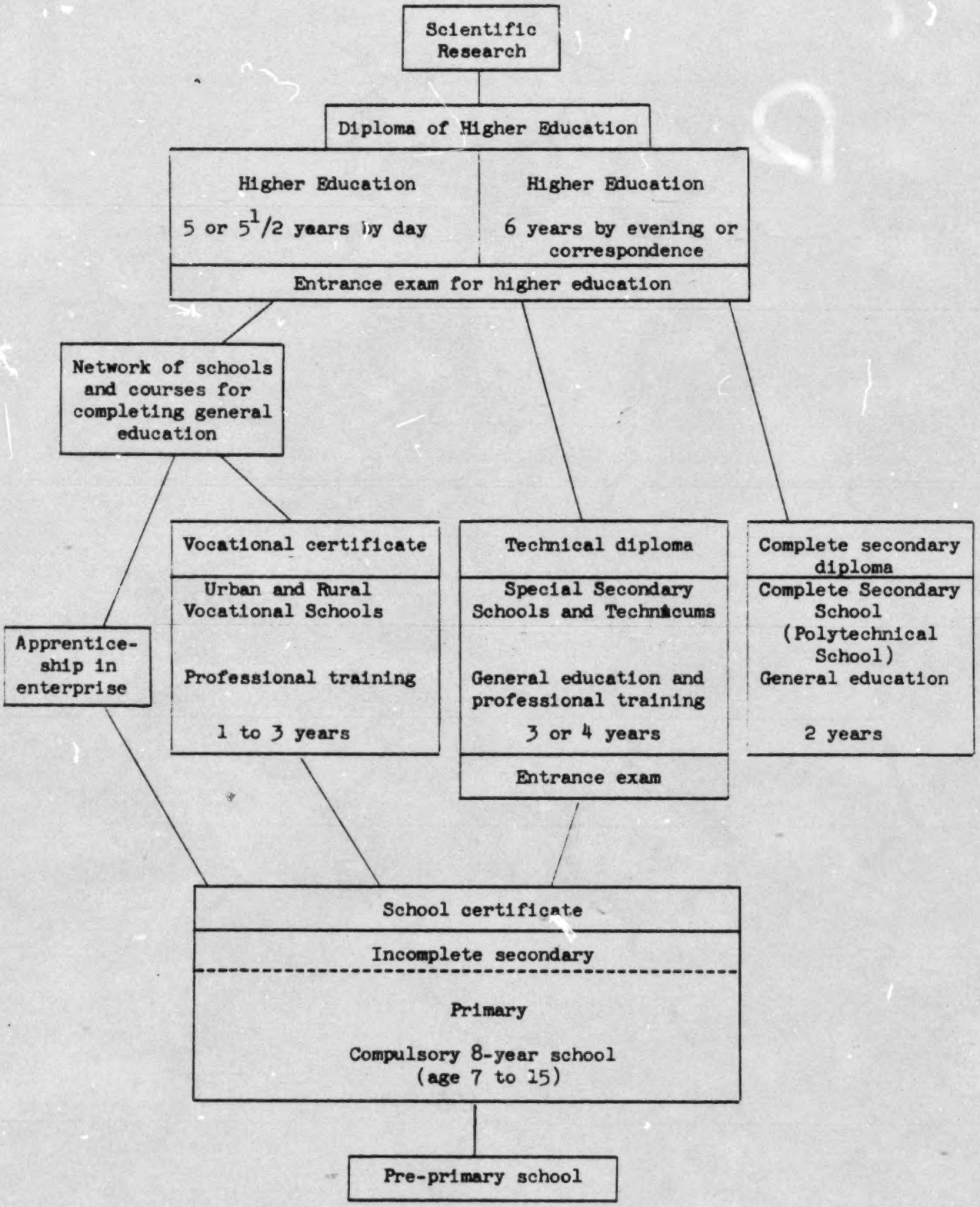
(2) Secondary technical schools referred to as technicums, for any subject related to material production. These schools, while continuing to give general education, train specialized technicians in 3 or 3 1/2 years whose degrees are equivalent to the above-mentioned.

(3) Urban and rural vocational technical schools the main aim of which is to provide organized training for skilled workers and to produce qualified manpower.

Any student holding a complete secondary school diploma or a degree conferred by a technicum may write the entrance exam to higher education provided either by specialized or polytechnical institutes or by universities. After five or six years of study, according to their specialization, students graduate from the institutions or write a State exam if they are in a university.

Teachers for higher education and scientific research students are trained in special courses organized by the university. After three years or so they write their first thesis and are awarded the title of 'candidates of science' in their respective specializations. Individual research and the writing of a second thesis enable them to graduate to the title of 'doctor' which gives them the right to hold a faculty chair.

An extensive system of evening and correspondence courses and of night schools, referred to as 'youth schools for town and country workers', enables anyone who so wishes to resume his studies where he dropped them and to complete the various stages of education.


Scientific Research
Diploma of Higher Education
Higher Education
5 or 5 1/2 years by day
Higher Education
6 years by evening or correspondence
Entrance exam for higher education
Network of schools and courses for completing general education
Apprentice-ship in enterprise
Vocational certificate
Urban and Rural Vocational Schools
Professional training
1 to 3 years
Technical diploma
Special Secondary Schools and Technicums
General education and professional training
3 or 4 years
Entrance exam
Complete secondary diploma
Complete Secondary School (Polytechnical School)
General education
2 years
School certificate
Incomplete secondary
Primary
Compulsory 8-year school (age 7 to 15)
Pre-primary school

Questions for further research and discussion

1. What are the basic types of secondary school in the USSR? Do these same distinctions exist in the educational system of your own country? Toward what end is each of the various types of education in the USSR designed?

2. In the beginning of his talk, Professor Jamin points out three major areas which must be considered when planning school enrolment. What are these areas? In your own country, what are some of the pressing problems which must be dealt with in each of these areas?

3. The problem of repeaters is a very complex one, as Professor Jamin indicates; sociological, pedagogical and economical factors intersect at this point. Do these factors exist also in your own country, and what is their respective weight with regard to the problem of repeaters?

4. To what extent and in what areas can the Soviet experience in educational planning provide useful lessons to the developing countries?

Suggested additional reading

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